

What is claimed is:

[Claim 1] 1. In a form-based development system, a method for dynamically constructing a form under an object framework during development of an application by a user, the method comprising:

- providing an ancestor class under an object framework, the ancestor class for representing a form in the development system;
- in response to user input, creating a descendant class inheriting from the ancestor class for representing a particular form to be included in the application;
- generating instructions for creating methods of the descendant class under the object framework;
- creating a type delegator for the descendant class, thereby enabling the descendant class to track changes made to the particular form during development of the application;
- creating an instance of the descendant class; and
- constructing the particular form in the development system based on the instance of the descendant class.

[Claim 2] 2. The method of claim 1, wherein the object framework includes Microsoft .NET Framework.

[Claim 3] 3. The method of claim 1, wherein said creating step includes creating a descendant class for representing the particular form in a user interface of the development system.

[Claim 4] 4. The method of claim 1, wherein said creating step includes inheriting a set of components provided by the ancestor class for representing components that may be placed on the particular form.

[Claim 5] 5. The method of claim 1, wherein said creating step includes creating an assembly for the descendant class.

[Claim 6] 6. The method of claim 1, further comprising:
creating a second descendant class which inherits from the descendant class, the created second descendant class for representing a form which inherits from the particular form.

[Claim 7] 7. The method of claim 1, wherein said constructing step includes constructing the particular form based upon the descendant class in a user interface of the development system.

[Claim 8] 8. The method of claim 1, wherein said constructing step includes displaying a component palette including components which the user can select for placement on the particular form.

[Claim 9] 9. The method of claim 8, further comprising:
receiving user input for placing components selected from the palette on the particular form.

[Claim 10] 10. The method of claim 9, wherein the type delegator tracks creation of components on the particular form in response to a user placing a component on the particular form.

[Claim 11] 11. The method of claim 9, wherein the type delegator persists information regarding components placed on the particular form, thereby enabling the components placed on the particular form to be recreated at runtime.

[Claim 12] 12. The method of claim 1, wherein said generating step includes generating a constructor for the descendant class.

[Claim 13] 13. The method of claim 12, wherein said step of generating a constructor includes generating intermediate language instructions for building the constructor.

[Claim 14] 14. The method of claim 13, wherein said step of generating intermediate language instructions includes using classes provided by the object framework for generating intermediate language instructions.

[Claim 15] 15. The method of claim 13, wherein said generating step includes generating instructions for calling the constructor of the ancestor class, thereby ensuring execution of an appropriate constructor implemented by the ancestor class.

[Claim 16] 16. The method of claim 1, wherein said generating step includes generating methods for overriding notification methods of the ancestor class.

[Claim 17] 17. The method of claim 16, wherein said generating step includes generating intermediate language instructions for overriding notification methods of the ancestor class.

[Claim 18] 18. The method of claim 1, wherein the type delegator provides information for enumerating fields, methods, properties, and events in response to user input on the particular form in the development system.

[Claim 19] 19. The method of claim 1, wherein the type delegator generates metadata information in response to user input on the particular form.

[Claim 20] 20. The method of claim 19, wherein said step of generating metadata information includes adding a reference to methods of the application assigned to components on the particular form.

[Claim 21] 21. The method of claim 1, further comprising:
persisting state of the particular form, enabling the particular form to be recreated at runtime.

[Claim 22] 22. The method of claim 21, wherein said persisting step includes persisting user input on the particular form.

[Claim 23] 23. A computer-readable medium having processor-executable instructions for performing the method of claim 1.

[Claim 24] 24. A downloadable set of processor-executable instructions for performing the method of claim 1.

[Claim 25] 25. A development system for dynamically constructing a form responsive to user input under an object framework during development of an application, the system comprising:

an ancestor class for representing the form under the object framework;
a proxy module for creating a descendant class inheriting from the ancestor class in response to user input, dynamically generating methods of the descendant class, and constructing an instance of the descendant class under the object framework for representing a particular form in the development system;

a type delegator for the descendant class for persisting user input on the particular form during development of the application; and
a module for displaying the particular form in a user interface of the development system based on the descendant class and the persisted user input.

[Claim 26] 26. The system of claim 25, wherein the object framework includes Microsoft .NET Framework.

[Claim 27] 27. The system of claim 25, wherein the proxy module creates an assembly for the descendant class.

[Claim 28] 28. The system of claim 25, wherein the proxy module creates a descendant class for representing the particular form in a user interface of the development system.

[Claim 29] 29. The system of claim 28, wherein the descendant class inherits a set of components provided by the ancestor class for representing components that may be placed on the particular form.

[Claim 30] 30. The system of claim 28, wherein the proxy module creates a second descendant class which inherits from the descendant class, the created second descendant class for representing a second form which inherits from the particular form previously created in the development system.

[Claim 31] 31. The system of claim 28, wherein the form includes a component palette comprising components which the user can select.

[Claim 32] 32. The system of claim 31, wherein the type delegator persists user input for placing components selected from the palette on the form.

[Claim 33] 33. The system of claim 32, wherein the type delegator persists information regarding components placed on the form, thereby enabling components to be recreated at runtime.

[Claim 34] 34. The system of claim 25, wherein the proxy module generates a constructor for the descendant class.

[Claim 35] 35. The system of claim 34, wherein the proxy module generates intermediate language instructions for building the constructor.

[Claim 36] 36. The system of claim 35, wherein the proxy module generates intermediate language instructions using classes for generating intermediate language instructions provided by the object framework.

[Claim 37] 37. The system of claim 35, wherein the proxy module generates instructions for calling the constructor of the ancestor class, thereby ensuring execution of an appropriate constructor implemented by the ancestor class.

[Claim 38] 38. The system of claim 25, wherein the proxy module generates methods for overriding notification methods of the ancestor class.

[Claim 39] 39. The system of claim 38, wherein the proxy module generates intermediate language instructions for overriding notification methods of the ancestor class.

[Claim 40] 40. The system of claim 39, wherein the proxy module generates intermediate language instructions using classes for generating intermediate language instructions provided by the object framework.

[Claim 41] 41. The system of claim 25, wherein the type delegator provides information for enumerating fields, systems, properties, and events in response to user input on the form during development of the application.

[Claim 42] 42. The system of claim 25, wherein the type delegator generates metadata information in response to user input on the form.

[Claim 43] 43. The system of claim 42, wherein said metadata information includes a reference to methods of the application assigned to particular components on the form.

[Claim 44] 44. The system of claim 43, wherein said metadata information and the descendant class are used to reconstruct the form as part of the application at runtime.

[Claim 45] 45. The system of claim 25, wherein the form comprises a form open on a visual design surface of the development system.

[Claim 46] 46. The system of claim 25, further comprising:
a persisting mechanism for persisting state of the form.

[Claim 47] 47. The system of claim 46, wherein the persisting mechanism persists user input on the form during development of the application in the development system.

[Claim 48] 48. The system of claim 46, wherein the persisting mechanism enables the form to be recreated at runtime as part of the application.